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10/604,711	08/12/2003	James Allen Charnley JR.	P00899-US1	1710

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EXAMINER	
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ART UNIT	PAPER NUMBER
3696	

MAIL DATE	DELIVERY MODE
06/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/604,711	CHARNLEY, JAMES ALLEN	
	Examiner	Art Unit	
	GERALD C. VIZVARY	3696	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. The following is a non-final office action in response to the communications received on 3/17/2008. Claims 1-4 & 6-14 are now pending in this application.

Objection withdrawal

2. The wording of claim 12 has been corrected and the objection is subsequently withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 & 6-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Rebane US 6,078,904.

As per claim 1 (currently amended), Rebane US 6,078,904 teaches a method of generating a market-sector level index of investment portfolio performance, comprising the steps of:

acquiring data for ~~a population~~ large, market-sector populations of investments consisting of book-valued collections of secondary-market securities ("In accordance with the present invention, the foregoing analysis and computations are embodied in a

software product for controlling and configuring a computer to receive data descriptive of various investments and their risk characteristics, to interactively determine an investor's risk tolerance function, to allocate investment assets to an investment portfolio, to compute the probability density function of the portfolio's performance with respect to the investor's assets, and to compute and maximize the expected value of the probability density function of the investor's probability preferences." Rebane US 6,078,904 col. 8, lines 6-16);

generating a contiguous series of the measurement of periodic investment return for the population of investments whose operations mirror that of an investment manager holding a diversified investment ("Prior to any optimization of a portfolio, the investor creates 601 at least one RTF to define his risk preferences using the RTF module 315. Once generated the RTF is stored and accessed as needed by the RDAA and RR/CAPM modules. The investor may review and update his RTF at any time, periodically or when a financially significant event has occurred. The process of creating the investor's RTF is further described below in sctn.5.4." Rebane US 6,078,904 col. 2, lines 31-39);

dividing the population of investments into market-sector groups whose pattern and level of past periodic returns has been uniquely different as stipulated under the tenets of Modern Portfolio Theory ("The total rate of return variance of such a portfolio is then given by $\sigma_s^2(\underline{f}) = \underline{f}^T \text{cov } S\underline{f}$ which shows the dependence of the portfolio's return variance on the allocation vector .function.. In modern portfolio theory [4] it is $\sigma(f)$ from (3) that

gives the uniform measure of portfolio risk for all investors, and thus constrains CAPM to treat all investors equally. Rebane US 6,078,904 col. 12, lines 31-39);

calculating an average of the population period-returns for each returns period and each market-sector group ("The asset allocation program 201 is `stateful system` in that its internal data representation consists of a formal list of data structures and related status parameters having current values." Rebane US 6,078,904 col. 11, lines 45-48);

creating index-comparison statistics for each market sector ("The asset allocation program 201 performs certain functions and processes automatically and in response to user input depending on the current state of the system." Rebane US 6,078,904 col. 11, lines 48-51); and

generating population-comparison statistics for each market sector from periodic returns data of the market-sector group. ("Prior to any optimization of a portfolio, the investor creates 601 at least one RTF to define his risk preferences using the RTF module 315. Once generated the RTF is stored and accessed as needed by the RDAA and RR/CAPM modules." Rebane US 6,078,904 col. 12, lines 31-39)

As per claim 2 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the index-comparison statistics are calculated using the formula of: [(ending value-preceding period)*(1+(average periodic return-current period/100))] = [ending value-current period] and the start date and beginning value is set to coincide with earliest available initial date and the initial-date index value for an associated primary-market index. ("Input/edit current actual portfolio. Here the investor identifies the investments to

be included in the optimization, preferably by security label, and including purchase price, purchase date, current price. The price information may be accessed and provided by the account management module 310 Current market prediction data, including the Investment Horizon, Market Appreciation, and Standard Deviation data. Again, this data need not be manually input by the investor, but may be extracted from existing online sources via the account management module 310" Rebane US 6,078,904 col. 13, lines 4-13)

As per claim 3 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the index-comparison statistics are calculated using the formula of: [(ending value-preceding period)*(1+(average periodic return-current period/100)) = [ending value-current period] and the start date and ending dates for the compared indices are set to common values and the initial index value is set to 100. ("Input/edit current actual portfolio. Here the investor identifies the investments to be included in the optimization, preferably by security label, and including purchase price, purchase date, current price." Rebane US 6,078,904 col. 13, lines 4-7)

As per claim 4 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the population-comparison statistics are calculated using an equilibrium line structured under the tenets of the CAPM. ("The investor generates 607, 609 an optimized allocation of investment assets for the current short list, including owned securities, of

investment assets, using the RDAA module 301 and for the RR/CAPM module 303." Rebane US 6,078,904 col. 13, lines 28-31)

5. (canceled)

As per claim 6 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the populations of investments are comprised of asset classes of mutual fund securities. ("Before concluding this subsection we introduce a further capability of both RR/CAPM and RDAA that applies uniformly to all solution forms. This is the ability of the investor to specify enforced diversification and/or minimums for all elements of the decision vector f such as may be imposed by prudence, corporate policy, or governmental regulations on, say, a mutual funds manager." Rebane US 6,078,904 col. 28, lines 20-27)

As per claim 7 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the periodic returns are calculated on the basis of quarterly periodic returns. ("Prior to any optimization of a portfolio, the investor creates 601 at least one RTF to define his risk preferences using the RTF module 315. Once generated the RTF is stored and accessed as needed by the RDAA and RR/CAPM modules. The investor may review and update his RTF at any time, periodically or when a financially significant event has occurred." Rebane US 6,078,904 col. 12, lines 35-38)

As per claim 8 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein

the periodic returns are calculated on the basis of daily periodic returns. ("Prior to any optimization of a portfolio, the investor creates 601 at least one RTF to define his risk preferences using the RTF module 315. Once generated the RTF is stored and accessed as needed by the RDAA and RR/CAPM modules. The investor may review and update his RTF at any time, periodically or when a financially significant event has occurred." Rebane US 6,078,904 col. 12, lines 35-38).

As per claim 9 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the variance in periodic returns is calculated as its absolute value, known as the standard deviation of periodic returns around their average value. ("The preceding RDAA solutions robustly cull the Nmember `short list` when certain issues provide no benefits of diversification. However so far we have been forced to invest the entire amounts specified by A.sub.1T and A.sub.1 no matter what the current risk free return R.sub.RF or the historical performance (e.g. reflected by alpha, beta, sigma, covS) of the N securities." Rebane US 6,078,904 col. 27, lines 32-39)

As per claim 10 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the variance in periodic returns is calculated in terms of its value relative to the pattern and level of the variance in periodic returns for a benchmark measure, otherwise known as beta. ("The preceding RDAA solutions robustly cull the N-member `short list` when certain issues provide no benefits of diversification. However so far we have been forced to invest the entire amounts specified by A_{1T} and A_1 no matter what the current

risk free return R_{RF} or the historical performance (e.g. reflected by alpha, beta, sigma, covS) of the N securities." Rebane US 6,078,904 col. 27, lines 32-39)

As per claim 11 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the population of periodic returns data comes from an average of a population of investment alternatives combined as four market-sectors. ("The preceding RDAA solutions robustly cull the Nmember `short list` when certain issues provide no benefits of diversification. However so far we have been forced to invest the entire amounts specified by A_{1T} and A_1 no matter what the current risk free return R_{RF} or the historical performance (e.g. reflected by alpha, beta, sigma, covS) of the N securities. Due to its direct approach to maximizing the investor's utility-mapped PP, RDAA may also be configured to select the amount A_{1T} to be invested subject to the investor supplied constraint that A_{1T} ε $[0,_{f1,L1M}A_T]$ where 023 $f_{1,L1M}$ ≤1 is termed the investment fraction of total net assets. Rebane US 6,078,904 col. 27, lines 32-43)

As per claim 12 (currently amended), Rebane US 6,078,904 teaches a method of claim 1, wherein the population of periodic returns data comes from an average of a population of investment alternatives combined as[[-]] five ~~market~~ market-sectors. ("The preceding RDAA solutions robustly cull the Nmember `short list` when certain issues provide no benefits of diversification. However so far we have been forced to invest the entire amounts specified by A_{1T} and A_1 no matter what the current risk free return R_{RF} or the historical performance (e.g. reflected by alpha, beta, sigma, covS) of the N

securities. Due to its direct approach to maximizing the investor's utility-mapped PP, RDAA may also be configured to select the amount A_{1T} to be invested subject to the investor supplied constraint that A_{1T} ε $[0,_{f1,L1M}A_T]$ where 023 $f_{1,L1M}$ ≤1 is termed the investment fraction of total net assets. Rebane US 6,078,904 col. 27, lines 32-43)

As per claim 13 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the population of periodic returns data comes from an average of a population of investment alternatives combined as seven market-sectors. ("The preceding RDAA solutions robustly cull the Nmember `short list` when certain issues provide no benefits of diversification. However so far we have been forced to invest the entire amounts specified by A_{1T} and A_1 no matter what the current risk free return R_{RF} or the historical performance (e.g. reflected by alpha, beta, sigma, covS) of the N securities. Due to its direct approach to maximizing the investor's utility-mapped PP, RDAA may also be configured to select the amount A_{1T} to be invested subject to the investor supplied constraint that A_{1T} ε $[0,_{f1,L1M}A_T]$ where 023 $f_{1,L1M}$ ≤1 is termed the investment fraction of total net assets. Rebane US 6,078,904 col. 27, lines 32-43)

As per claim 14 (original), Rebane US 6,078,904 teaches a method of claim 1, wherein the population of periodic returns data comes from an average of a population of investment alternatives combined as ten market-sectors. ("The preceding RDAA solutions robustly cull the Nmember `short list` when certain issues provide no benefits of diversification. However so far we have been forced to invest the entire amounts

specified by A_{1T} and A_1 no matter what the current risk free return R_{RF} or the historical performance (e.g. reflected by alpha, beta, sigma, covS) of the N securities. Due to its direct approach to maximizing the investor's utility-mapped PP, RDAA may also be configured to select the amount A_{1T} to be invested subject to the investor supplied constraint that A_{1T} ε $[0,_{f1,L1M}A_T]$ where 023 $f_{1,L1M}$ ≤1 is termed the investment fraction of total net assets. Rebane US 6,078,904 col. 27, lines 32-43)

Response to Arguments

5. In the remarks filed on 3/17/2008, Applicant argues that **(1)** Reference (Rebane 6,078,904) Fails to Disclose with creating an index; **(2)** Reference Fails to Disclose the RTF method or any others outlined in his patent to the process of constructing an index; **(3)** does not generate comparison statistics from periodic returns data of a market sector group..

(1) As per Applicant's argument that "Rebane's process has nothing to do with creating an index", the Examiner respectfully refers to the passages;

"The asset allocation program 201 is `stateful system` in that its internal data representation consists of a formal list of data structures and related status parameters having current values. The asset allocation program 201 performs certain functions and processes automatically and in response to user input depending on the current state of the system. The following is a list of `state variables` that are stored by the asset

allocation program 201:" (Rebane 6,078,904 col. 11 lines 45-53) and "Current Market Prediction: an estimate of market return, for example, one based on a benchmark market index, such as the S&P 500 or the Dow Jones Industrial Average." (Rebane 6,078,904 col. 12 lines 4-7.) The Examiner respectfully submits that the index based on "the S&P 500 or the Dow Jones Industrial Average" is taught by Rebane's use of System State variables.

(2) As per Applicant's argument that "Rebane does not apply the RTF method or any others outlined in his patent to the process of constructing an index", the Examiner respectfully refers to the passages;

"The RR/CAPM approach is based on individual risk tolerance expressed over a bounded and currently relevant monetary spectrum. It takes the probability density function (p.d.f.) of predicted total assets at the end of the investment horizon, as defined by (15) through (18), and maps this onto the individual's PP values as represented by the RTF. This mapping is shown in FIG. 3. Specifically we seek to compute the mean of the mapped distribution on the PP axis given by E(PP|f) where .function. is now the appropriate portfolio design fraction vector in the sense discussed above. Let the RTF be represented by the analytical regression $g(A)\varepsilon[0,1]$ for $A_D \leq A \leq A_H$ with all needed derivatives and where $g(A_D)=0$ and $g(A_H)=1$. In practice, g(A) need only be locally analytical in the sense described above. Then

$$E(PP|\underline{f}) = \int_{-\infty}^{\infty} g(A)h(A|\underline{f})dA$$

where h(A|f)is the portfolio's p.d.f. on total assets. Real world (i.e. `sane`) RTFs are appropriately smooth allowing us to closely approximate the function with a truncated Taylor series in the proximity of the mean A=μ, giving

$$g(A) \cong g(\mu) + g'(A)|_{\mu}(A-\mu) + g''(A)|_{\mu}\frac{(A-\mu)^2}{2}.$$

"

(Rebane 6,078,904 col. 23 lines 44-col. 24, line 4) and "Equation (22) is central to the further development here and, as seen below, its maximization forms the core of all RR/CAPM and RDAA portfolio design solutions" (Rebane 6,078,904 col. 24 lines 25-27) The Examiner respectfully submits that RTF method and its applications are taught by Rebane 6,078,904.

(3) As per Applicant's argument that Rebane's process does not generate comparison statistics from periodic returns data of a market sector group, the Examiner respectfully refers to the passages; "Representative epoch for securities (and market): These values define the time period over which the optimization of investment asset allocation is to be computed, and compared with market performance over the same period. (Rebane 6,078,904 col. 12 line 66-col. 13 line3) and "Current market prediction data, including the Investment Horizon, Market Appreciation, and Standard Deviation data. Again, this

data need not be manually input by the investor, but may be extracted from existing online sources via the account management module 310." (Rebane 6,078,904 col. 13 lines 10-13) and "In this screen display 901, for each of several investor selected portfolios P1, P2, P3, and P4, the performance 903 of that portfolio is plotted against the investor's residual PP value as a function of expected market performance 917 (holding standard deviation constant) at the investment horizon. The vertical axis 903 is scaled in the percent of PP remaining (i.e. 1-PP(A_T) which is a meaningful comparator to the investor since it is indexed from his current asset (A_T) level. The horizontal axis 905 is scaled to expected percent market returns. (Rebane 6,078,904 col. 16 lines 30-39) The Examiner respectfully submits that the generation, display and comparison of market statistics are taught by Rebane 6,078,904.

Conclusion

6. The following is prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Zosin (US 2004/0181479 A1) teaches the optimization of a portfolio and/or multi-portfolio of assets, such as stocks. In some preferred embodiments, new methodology can be employed wherein a confidence region for a mean-variance efficiency set is utilized. In some preferred embodiments, new methodology can be employed for improved computation of a reward-to-variability ratio or Sharpe Ratio. In some preferred embodiments, new methodology can be employed for multiportfolio optimization. In

some preferred embodiments, a portfolio optimization engine or module can be adapted to implement one or more of these new methodologies, along with any other desired methodologies.

Young (US 2001/0014875 A1) teaches optimizing portfolios of multiple participants. Preferably the portfolios of such multiple participants comprise fixed income instruments. The disclosed systems and methods include using at least one computer system for storing digital data representing portfolio holdings of multiple parties and, in particular, for each participant storing in the computer memory data representing constraints with respect to the desired portfolio. The method and system comprise optimizing using an optimization engine portfolio and constraint information of multiple participants so as to generate a set of trades that would substantially optimize participants portfolios with respect to a known objective.

Keyes (US 2001/0044766 A1) teaches method of valuation of large groups of assets using classification and regression trees is described. The method includes defining relevant portfolio segmentations, assessing performance of the classification and regression tree based model against a simple model and ranking all portfolio segments based upon performance of the models. Iterative and adaptive statistical evaluation of all assets and statistical inferences are used to generate the segmentations. The assets are collected into a database, grouped by credit variable, subdivided by ratings as to

those variables and then rated individually. The assets are then regrouped and a collective valuation is established by cumulating individual valuations.

Lehmann & Modest, Mutual Fund Evaluation: A Comparison of Benchmarks and Benchmark Comparisons The Journal of Finance vol. 42, No. 2 (June 1987), pp. 233-265

7. **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gerald C. Vizvary whose telephone number is 571-270-3268. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ella Colbert can be reached on 571-272-6741. The fax phone number for the organization where this application or proceeding is assigned is 571-270-4268.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ella Colbert/
Primary Examiner, Art Unit 3696

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June 1, 2008